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[This Drawing is a reproduction of the Original on a reduced scale.]

Fig. 1.

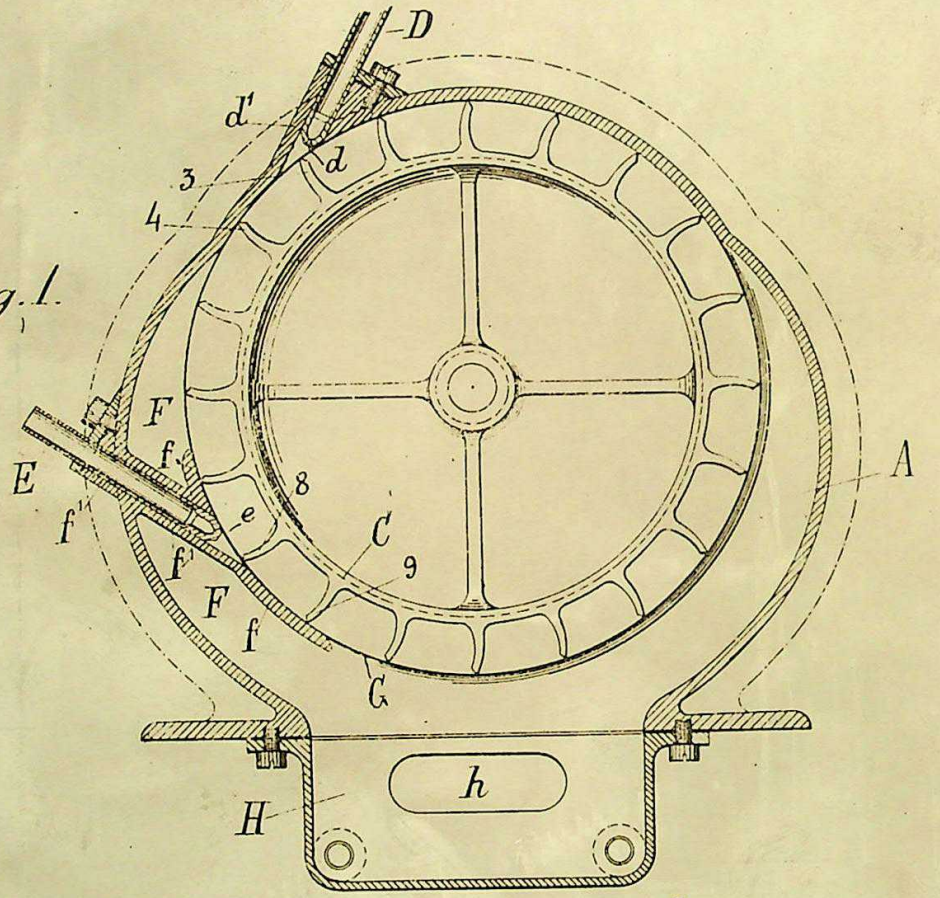


Fig. 3.

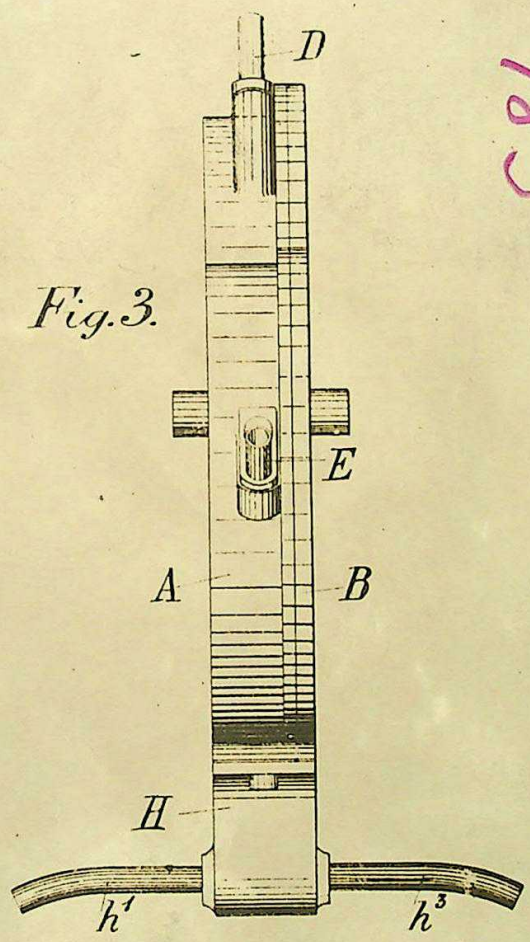
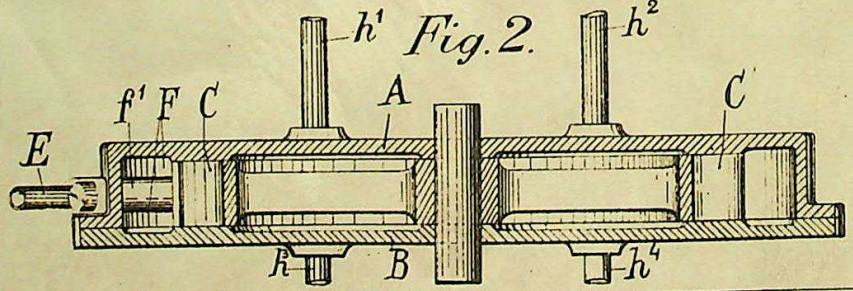


Fig. 2.



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for Her Majesty's Stationery Office. 1896.
Malby & Sons, Photo-Litho.

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Motors Rotary

N° 1227 A.D. 1896

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Date of Application, 17th Jan., 1896—Accepted, 4th Apr., 1896

COMPLETE SPECIFICATION.

DUPLICATE.

An Improved Turbine.

I, HUGO WENTZKY, of 71, Königgratzer Strasse, Berlin, in the German Empire, Merchant, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement, reference being had to the accompanying drawings and to the letters and figures marked thereon, that is to say :—

This invention relates to an improved turbine, and will be readily understood on reference to the annexed drawings, in which :—

Fig. 1 is a longitudinal section through the box and the two nozzles.

Fig. 2 a transverse section, and

Fig. 3 a side view.

In its essential parts, this turbine consists :--Of the box A, provided with a segmental piece f, and connecting tubes f^1 and d^1 in which are fitted the nozzles ; of the cover B ; of the bucket or float-wheel C ; of the feed nozzles D and E ; and of the outlet channels F and G partially connected together.

The new turbine is characterized by the arrangement of its feed nozzles at a right angle, and by the partial communication of its outlet channels, and the advantage of these arrangements is that a very small quantity of water is sufficient to obtain a sufficiently large force. The two orifices d and e have, in the example shown in the drawings, a diameter of 0·9 m/m, the delivery of water being 3 litres per minute, and the number of revolutions 1800.

The arrangement of the two feed nozzles is the following :—As shown in Fig. 1, the longitudinal median line of the nozzle D strikes the point of the third bucket or float (counting from the top) of the float wheel C, whilst the fourth float is struck in its middle. The longitudinal line of the nozzle E strikes the eighth bucket or float at $\frac{2}{10}$ths of its total length, and the ninth at $\frac{6}{10}$ths of its total length. Hence it follows that one of the buckets or floats of the wheel is always under the influence of the jet, and is struck by it about its middle so that the turbine can be started at any moment.

The outlet space F is separated from the feed nozzle E, so as to prevent the water on leaving the third bucket or float meeting the water from the terminal orifice e of the nozzle, as this would contribute to render the current of water irregular at its outlet. To this end, the segmental piece f, traverses the whole width of the box (see Fig. 1) and is connected to the wall of the box by means of the tube f^1 into which is fitted the feed nozzle E.

The water on leaving the outlet space F, is forced to pass on both sides of the tube f^1. Care must be taken at the same time that the water only remains stationary a short time in the buckets or floats, in proximity to the feed nozzles, as otherwise too great friction would be set up and hence there would be a loss of force. To avoid this loss, it is important that each bucket or float, filled with water and closed on all sides, and not communicating with the next bucket or float, should travel a distance equal to $\frac{1}{3}$rd of its own length so as to empty itself suddenly.

H is a box which serves to collect a small quantity of the water coming from the turbine, so that it may be used for any other object.

To prevent too much water being stored up, the lateral walls of the box H are provided with oblong openings h, whilst its lower end is provided with small tubes h^1, h^2, h^3, h^4, to which may be attached bottles to be filled with a suitable quantity of water.

[*Price 8d.*]

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is :—

1. A turbine having its feed nozzles separated from each other and arranged at about a right angle, so that the first nozzle opens on to the third bucket or float, and the second on to the eighth bucket or float, substantially as described.

2. The combination with a turbine, such as characterized in Claim 1, of two distinct outlet channels for the purpose of effecting the discharge of the first bucket or float before the filling of the second by the second feed nozzle, substantially as described.

3. The combination with the turbine characterized in Claims 1 and 2, of a water box H having its lateral walls provided with oblong openings h and its lower extremity with four outlet tubes h^1, h^2, h^3, h^4, substantially as described.

4. My improved turbine substantially as described and shown with reference to the accompanying drawings.

Dated this 17th day of January 1896.

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Agent for the Applicant.

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